



SOUTHERN CALIFORNIA  
**ASSOCIATION of GOVERNMENTS**



# HSRT Business Plan Summary

September 20, 2007

# POTENTIAL REGIONAL SOLUTION

---

Challenges can be addressed by a High-Speed Regional Transport system, a high performance and environmentally sensitive transportation concept.

## REGIONAL MOBILITY

- Ability to link the urban centers, serving the needs of commuters
- Reduce the number of private vehicles on the road
- Enable intensification of land uses in conjunction with transit accessibility, encouraging more effective land use patterns (2% Strategy)

## AVIATION DEMAND

- Create a link between urban centers and airports
- Enable a higher level of service for airport access and connecting passengers
- Improve airport operations and optimize investment of aviation infrastructure

## GOODS MOVEMENT

- Link the San Pedro Ports with potential inland port facilities
- Provide capacity to handle and move containers with little or no impacts



SOUTHERN CALIFORNIA  
ASSOCIATION of GOVERNMENTS

2007



# THE HSRT SYSTEM

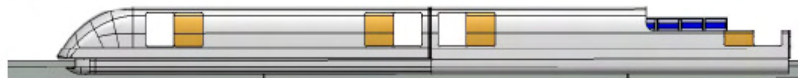
Development of a High-Speed Regional Transport system builds on the years of technical work completed by SCAG and the Maglev Task Force.

- Fully elevated system over existing public transportation corridors
- Use of high-speed, high-capacity trains traveling at speeds up to 250 mph
- 170 mile system linking L.A. core with strategic locations outside of the basin
- Ability to link the capacity in the region together and get better value from infrastructure investments
- Environmentally friendly mode of transport

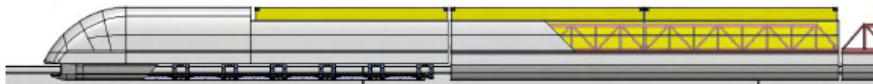
Passenger (Intercity, Regional, Airport Connector)



Cargo



Freight



SOUTHERN CALIFORNIA  
ASSOCIATION of GOVERNMENTS

2007





# HSRT NETWORK



## Legend

- IOS Passenger Route
- Extension to Ports
- - - - Existing Freight Railroads
- Extension to SBD
- Extension to LAX
- Extension to Palmdale



ASSOCIATION of GOVERNMENTS

2007



# HSRT COMPONENTS

---

There are three primary core businesses to the HSRT proposal.

## PASSENGER TRANSPORT

- Revenue derived from the transport of passengers and associated businesses
- Commuters fares, station parking, station concessions, etc.

## AVIATION SYSTEM

- Revenue from airport access and connecting passengers
- Reduction in airport infrastructure needs and costs
- FAA participation opportunities

## GOODS MOVEMENT

- Revenue generated from goods movement fees
- Enhancement of capacity to handle goods in the region
- Substitute for significant environmental mitigation requirements in the region

Fourth component is the RELATED DEVELOPMENT POTENTIAL



SOUTHERN CALIFORNIA  
ASSOCIATION of GOVERNMENTS

2007





# GOODS MOVEMENT PERFORMANCE

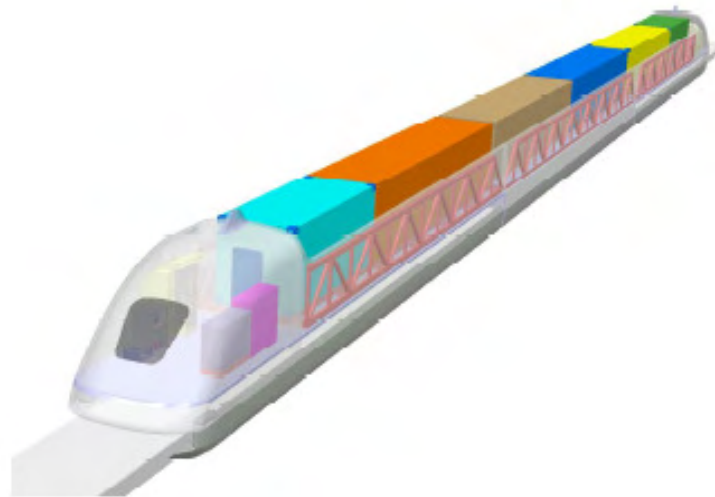
---

A high-capacity, fast and environmentally friendly method of expanding port capacity and goods movement in the region.

The HSRT system is capable of moving over 18,700 container trips per day, over 6.9 million container trips (13.7 million TEU) annually in a shared guideway.

Cargo trains will be a version of the passenger train designed to carry containers and using the same elevated guideway.

Freight operation will run in between passenger service with no degradation of service for passengers.



SOUTHERN CALIFORNIA  
ASSOCIATION of GOVERNMENTS

2007



IBI  
GROUP

# GOODS MOVEMENT CAPACITY

## SBD CAPACITY SHARED GUIDEWAY WITH PASSENGER SERVICE - 9.2M TEU

See Airport Charges Schedule at www.flynnair.com for more details

Operating Period	Hr/Day	Trains/Hr/Direction		Trains/Day/Direction		Potential Capacity Per Day and Direction				Per Year and Direction (24/7 Operation) TEU
		Passenger	Freight	Passenger	Freight	Freight				
						20 ft	40 ft	TEU		
Peak	8	6	6	48	48	42,528	96	1,824	3,744	1,366,560
Off-Peak	10	3	9	30	90	26,580	180	3,420	7,020	2,562,300
Night	2	0	12	0	24	-	48	912	1,872	683,280
Maintenance	4	0	0	0	0	-	-	-	-	-
Total	24	9	27	78	162	69,108	324	6,156	12,636	4,612,140
Total Passengers/Freight in Both Directions						138,216	648	12,312	25,272	9,224,280

## PMD EXCESS CAPACITY OF PORT SEGMENT - 4.4M TEU

Operating Period	Hr/Day	Trains/Hr/Direction Passenger      Freight		Trains/Day/Direction Passenger      Freight		Potential Capacity Per Day and Direction				Per Year and Direction (24/7 Operation) TEU
						Passenger	Freight			
							20 ft	40 ft	TEU	
Peak	8	0	6	0	48	-	96	1,824	3,744	1,366,560
Off-Peak	10	0	3	0	30	-	60	1,140	2,340	854,100
Night	2	0	0	0	0	-	0	-	-	-
Maintenance	4	0	0	0	0	-	-	-	-	-
Total	24	0	0	0	78	-	156	2,964	6,084	2,220,660
Total Passengers/Freight in Both Directions						-	312	5,928	12,168	4,441,320



SOUTHERN CALIFORNIA  
ASSOCIATION of GOVERNMENTS

2007



# FINANCIAL PERFORMANCE

HSRT financial performance based on different internal rates of return (IRR) on investment.

**26 Year Horizon: IOS+LAX+SBD(4.6M)+PMD(2.2M)+Ports Fees for Various IRR**

IRR	CPV	Average Passenger Fare	Freight Fee	
			PMD	SBD
5%	\$35,334 M	\$18.92	\$264.10	\$234.54
7%	\$34,031 M	\$22.90	\$297.00	\$263.76
9%	\$33,062 M	\$27.16	\$331.42	\$294.32
11%	\$32,325 M	\$31.64	\$366.74	\$325.68

**40 Year Horizon: IOS+LAX+SBD(4.6M)+PMD(2.2M)+Ports Fees for Various IRR**

IRR	CPV	Average Passenger Fare	Freight Fee	
			PMD	SBD
5%	\$36,757 M	\$15.52	\$238.80	\$212.10
7%	\$34,801 M	\$19.96	\$276.16	\$245.26
9%	\$33,485 M	\$24.75	\$314.96	\$279.70
11%	\$32,562 M	\$29.72	\$354.24	\$314.60

**60 Year Horizon: IOS+LAX+SBD(4.6M)+PMD(2.2M)+Ports Fees for Various IRR**

IRR	CPV	Average Passenger Fare	Freight Fee	
			PMD	SBD
5%	\$37,661 M	\$13.96	\$226.32	\$201.00
7%	\$35,162 M	\$18.84	\$267.86	\$237.88
9%	\$33,634 M	\$24.00	\$309.76	\$275.10
11%	\$32,625 M	\$29.25	\$351.18	\$311.88





# A FREIGHT-ONLY PERSPECTIVE



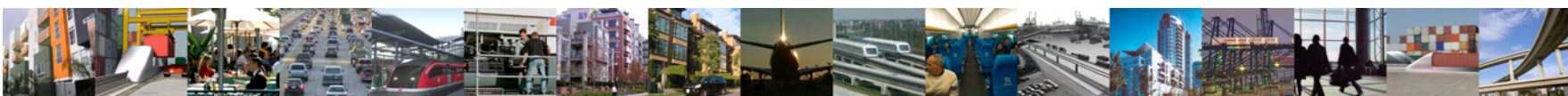
## Legend

- IOS Passenger Route
- Extension to Ports
- Existing Freight Railroads
- Extension to SBD
- Extension to LAX
- Extension to Palmdale



ASSOCIATION of GOVERNMENTS

2007

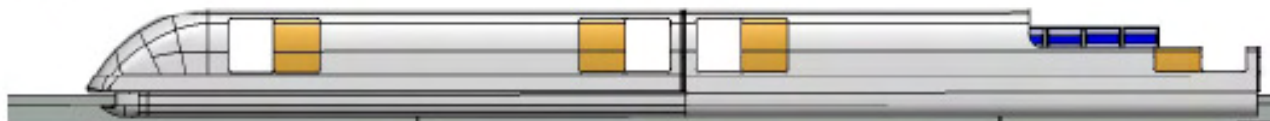


# A FREIGHT-ONLY PERSPECTIVE

## SBD CAPACITY: EXCLUSIVE GUIDEWAY

Operating Period	Hr/Day	Trains/Hr/Direction		Trains/Day/Direction		Potential Capacity				Per Year and Direction (24/7 Operation) TEU
		Passenger	Freight	Passenger	Freight	Per Day and Direction				
						Passenger	Freight			
							20 ft	40 ft	TEU	
Peak	8	0	12	0	96	-	192	3,648	7,488	2,733,120
Off-Peak	10	0	12	0	120	-	240	4,560	9,360	3,416,400
Night	2	0	12	0	24	-	48	912	1,872	683,280
Maintenance	4	0	0	0	0	-	-	-	-	-
Total	24	0	36	0	240	-	480	9,120	18,720	6,832,800
Total Passengers/Freight in Both Directions						-	960	18,240	37,440	13,665,600

Cargo



Freight



SOUTHERN CALIFORNIA  
ASSOCIATION of GOVERNMENTS

2007





# A FREIGHT-ONLY PERSPECTIVE

HSRT financial performance based on different internal rates of return (IRR) on investment.

**26 Year Horizon:** Financial Performance for a Freight-Only System - Ports to SBD for Various IRR

IRR	CPV	Freight Revenue (at \$300/FEU)	Gap	Freight Fee per FEU for NPV = 0
5%	\$16,252	\$15,758 M	-\$494 M	\$309.40
7%	\$15,627	\$13,145 M	-\$2,482 M	\$356.65
9%	\$15,163	\$11,201 M	-\$3,962 M	\$406.10
11%	\$14,811	\$9,725 M	-\$5,086 M	\$456.89

**40 Year Horizon:** Financial Performance for a Freight-Only System - Ports to SBD for Various IRR

IRR		Freight Revenue (at \$300/FEU)	Gap	Freight Fee per FEU for NPV = 0
5%	\$16,934	\$18,612 M	\$1,678 M	\$272.96
7%	\$15,997	\$14,689 M	-\$1,308 M	\$326.70
9%	\$15,366	\$12,050 M	-\$3,316 M	\$382.54
11%	\$14,923	\$10,199 M	-\$4,724 M	\$438.97

**60 Year Horizon:** Financial Performance for a Freight-Only System - Ports to SBD for Various IRR

IRR		Freight Revenue (at \$300/FEU)	Gap	Freight Fee per FEU for NPV = 0
5%	\$17,368	\$20,426 M	\$3,058 M	\$255.08
7%	\$16,170	\$15,414 M	-\$756 M	\$314.71
9%	\$15,437	\$12,348 M	-\$3,089 M	\$375.04
11%	\$14,954	\$10,325 M	-\$4,629 M	\$434.50





# EMERGING TECHNOLOGIES (FREIGHT-ONLY)

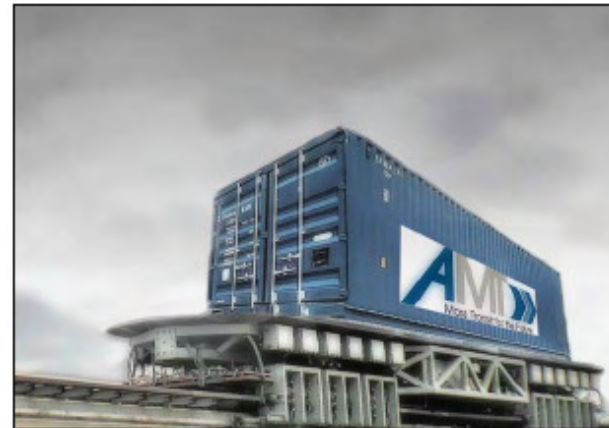
---

Additional US technologies are in development that can further reduce the capital and operating costs.

- General Atomics



- American Maglev Technologies



# RESULTING CONCLUSIONS

---

1. Advanced technology holds promise for high-capacity, fast, efficient and environmentally-friendly transport of goods.
2. Preliminary financial analysis indicates cost-competitiveness of the system.
3. Important pieces remain to be developed to complete the system.
  - Location of Inland Port Facilities and their costs.
  - Port Infrastructure requirements/costs to keep up with HSRT system.
4. Despite the benefits and potential, the concept will not develop on it's own.
5. Public financial support & vision needed to shepherd the concept into a plan.



SOUTHERN CALIFORNIA  
ASSOCIATION of GOVERNMENTS

2007

